

DEVELOPMENT OF THE RURAL NON-FARM ECONOMY ON JAVA : A SEARCH FOR ROOTS AND DETERMINATIVE FACTORS

by
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ABSTRACT

Ever since a number of centuries non-agricultural activities play an important role in the rural economy of Java. The last decades, their significance has increased further. Presently, close to half of both primary employment and income in rural Java originate from outside the agricultural sector. In this contribution, the history of rural industry on Java is outlined and the recent developments in its rural economy are subsequently summarized. Ensuing this, result from both enterprise and household surveys as recently carried out in the Special Province of Yogyakarta are presented and analysed. This with a view to assess whether the behaviour of the various components of the rural non-farm economy in the area is in line with developments in South East Asia as a whole as sketched by Saith 1992 in his well-known publication on the rural non-farm economy in developing countries. A number of conclusions are arrived at pertaining to the relevance and applicability of his model to the Javanese context. Finally, as assessment of the prospects of rural industry in this part of Indonesia is presented and contrasted with his findings.

INTRODUCTION

Among human geographers, economists and anthropologists, the multivarious roles of rural industrialization in processes of regional change and development have become an increasingly popular field of study. A generally observed lack of employment opportunities in the agricultural sector and the acknowledged perils of a rural exodus to urban regions are some of the main factors to explain the steadily growing interest. Other factors are related to the disappointing impact of the earlier

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urban industrialisation-oriented strategies on poverty alleviation, the need to relocate existing enterprises away from seriously overcrowded locations to rural areas, and to the necessity to establish new industrial units in these environments. Finally, the newly found emphasis has arisen from numerous analyses of the growth paths and experiences of the highly dynamic economies of the newly industrializing East and Southeast Asian countries and, albeit more recently, from those of the People's Republic of China.

As exemplified by the history of the Indonesian, and more in particular the Javanese economy, rural industrial activities in developing countries are neither relatively new phenomena, nor have they only recently become important in the provision of employment and income opportunities for their populations. Data presented by Liedholm and Mead (1987) even indicate that in 1976 a share of 80% of Indonesian manufacturing employment was located in rural areas.

Furthermore, studies by Boomgaard (1991), White (1991), Alexander and Alexander (1991) and Tadjuddin (1991), among others, have come up with considerable evidence of a widespread and regular involvement of rural dwellers on Java in non-agricultural productive pursuits, before and during the colonial period. An area with a particularly remarkable record in this respects in the central part of Java, more specifically the present-day Province of Yogyakarta. Here, before and throughout the 19th century, the involvement of the population in manufacturing production was high for Javanese standards. It became particularly high in the course of this century. The special position of this region as the centre of the Mataram empire and as the residence of the sultan helps in explaining its long standing importance as an area of (sophisticated) handicrafts, but also of certain types of manufacturing.

This article first aim is to present an overview of the history of rural industry on Java, as starting from the 17th century. Second, recent developments of the rural economy of Java in general and the Province of Yogyakarta in particular will be discussed. Third, a wealth of both secondary and primary data allows us to also attempt an assessment of the relevance and applicability of Saith's Southeast Asian scenario as pertaining to the five stages in the behaviour of the different components of the rural non-farm economic activities of farming households for this part of Java (cf. Saith, 1992). Fourth, our assessments pertaining the prospects of rural industry in the area of study will be compared and contrasted with the perspectives of this sector as outlined by Saith.

DYNAMIC IN RURAL INDUSTRY BETWEEN THE 17TH AND MID-20TH CENTURY

Until the beginning of the 19th century, agriculture commanded sufficiently high returns to labour to enable a large majority of the Javanese population to be first and foremost cultivators. Most of them could produce rice far in excess of their

households' requirements. Side-line activities were carried out, but primarily because alternative ways of obtaining goods and services were either perceived as being too expensive, or were non-existent (cf. Boomgaard, 1991). Some of the population fully specialized in industrial or mercantile activities. Obviously, they were pulled towards these forms because higher returns to labour in comparison to agriculture could be generated in these fields.

Examples of industrial activities that were already important for the economic based of households for centuries were shipbuilding and the production of textiles. As early as the first quarter of the 15th century, Java produced large quantities of cotton yarns and cotton cloth, part of which was reportedly exported on some scale. Reports indicate that the production of textiles was gaining importance throughout the 18th century. It is known, for example, that in the second half of this period the VOC invited tenders in Yogyakarta for manufacturing of coarse cloth for its slaves (Boomgaard 1991, p.22). Early in the 19th century, four types of production organization in the textile sub-sector could be distinguished, viz. Manufactures and workshops (both of these probably restricted to the Kraton towns Solo and Yogyakarta); cottage industry with forms of putting-out production systems (a common type of production, mostly carried out as a side-line activity in peasant households); and production by loom-owning peasant household, predominantly geared to their own needs. Other common non-agricultural production activities could be found in the sphere of metal working (such as, for instance, keris or dagger making, blacksmithing and gamelan or musical instrument making) and plaiting and basketry. Often concentrations of activities of considerable magnitude were present.

Evidence, which dates back to 1650, indicates that as much as 4,000 women engaged in activities such as spinning, weaving, embroidery, sewing, and painting (probably batik) were found in the kraton the walled central area in Yogyakarta (Boomgaard op.cit). Although, strictly speaking, these were town-based activities, other research findings indicate that production was not limited to towns. A Substantial part of the population in the rural villages of Imogiri and Sanden (located in present-day Bantul Regency, south of Yogyakarta), for instance, was involved in batik production at considerable scale during the leadership of the Mataram Empire by Sultan Agung (1613-1646) (cf. Sugihardjo 1991; Salamun 1992).

During the 19th century, the consequences of the expanding colonial state, the expansion of Western enterprise, and the rapidly growing population (estimated at 1.4% per annum), combined into dramatic changes in all sectors of the economy. A precise reconstruction of the process is hampered by a lack of data. The overall trends, however, are clear. In agriculture, the plantations spread over substantial parts of the island of Java. Peasant production intensified, mainly due to increasing cropping ratio's. This intensification was obviously necessitated by progressing decrease in the size of the peasant farmers holdings. As a consequence, an increasing number of peasant households, instead of being pulled into non-agricultural activities, as observed before and early in the 19th century, were pushed into non-agricultural activities to

make ends meet (Boomgaard op.cit). The expansion of the production of plaited were in Java in the course of the century may serve as illustration of this push process. The Javanese peasants began producing household commodities, such as mats and baskets, on a large scale. These items, which had previously been imported from other islands of the archipelago, were mainly produced as a side line activity (in some sources referred to as an industry of lost moments). For the households involved, it remained of lesser importance than agriculture, both in time spent as in income generated. Other subsectors of the secondary sector on Java, such as shipbuilding, textile production, as well as the metal industry, had been able to maintain production levels during this century, despite the expansion of Western enterprise, by adopting to the market forces.

Studies on the 19th century rural economy indicate that the share of households involved in non-agricultural activities increased substantially. The reasons for this are also attributed to the increase in monetisation and specialisation in relation to the cultivation system. Some sources even report a doubling of the proportion of these households, i.e. from 15% in 1815 to 29% in 1875 (cf. Boogaard op.cit., Tadjuddin 1991). Interesting information on the first two decades of the 20th century Javanese rural economy can be found in the 'Mindere Welvaart' research reports (or Lesser¹ Welfare research report) of the Colonial Administration, which cover the period 1904-1914. Comparisons of the 19th century figures with those included in the Welfare research reports are somewhat handicapped by different interpretations of variables. Definitional problems further blur the picture and frustrate efforts to gain insight into the dynamics in involvement of the rural population in various non-agricultural pursuits². A general consensus about the interpretation of these figures that reflect the intricate process of economic diversification during this era is, consequently, not present.

Maurer (1991) for instance, refers to a 19th century 'collapse'. Of non-farm rural activities on Java, which he attributes to the growing demand for agricultural labour on the plantations, but also to the increase of labour input following rice cultivation intensification and the growing of secondary food crops as necessitated by the growth of the population. This process is interpreted as 'hyper-specialization' in agriculture, a phenomenon that he holds responsible for a "sort of de-industrialization process which 'probably' (sic) took place" (p.94). Furthermore, according to Antlov and Svensson (1991) on Java "..... nearly all textile manufacturing for the market had vanished and only continued on a small scale in certain areas. (this) Downfall was documented clearly by the Declining Welfare Reports in 1904-1905, which disclosed a strong decrease in 41 of Java's 51 Regencies" (p.113).

¹ In some publications also referred to as "Declining Welfare". In our opinion, this translation of "Mindere Welvaart" is less accurate: suggests the presence of a process instead of the situation to which "mindere" refers.

² The figures of 1815 and 1875 concern households, while the figures of the Welfare survey of 1905 refer to economically active people.

Indeed, the results of the Lesser Welfare research reports generally do point out a lower level of involvement in non-agricultural activities. Nevertheless, according to these sources, the share of persons specialized in non-agricultural activities (i.e. not combining these with control of a farm) was already 16% at the time. White and Boomgaard have attempted to adjust the figures of the Lesser Welfare Research by adding those classified as having no enterprise or occupation at all (not less than 38% of the labour force) to the various sectors of the economy. Such on the basis of the assumption that these groups comprised of unpaid family labourers (White 1991, pp.43-44), a category which is not included in the 1905 statistics. Since it is likely that a large proportion of people in the 'residual' belongs to that category, their adjustment attempt seems fully justified. From the thus adapted figures a rather different picture emerges than the one on which Maurer (op.cit.) has based his assumptions. The pattern can be summarized as follows. The share of labour force engaged outside the agricultural sector as a primary occupation, was already 30% in the beginning of the 20th century. Taking into account the percentage of landless households at this time, i.e. 40%, this seems not an unrealistic figure. The large number of households which did not own land had to seek their livelihood in wage labour, and agriculture could not accommodate them all.

The results of the Lesser Welfare reports also indicate that, apart from trade, most people primarily involved in non-agricultural activities were engaged in industry. In this context an interesting characteristic is the sexual division of labour. It indicates that non-farm work was not a mere 'sideline' occupation for the women in households that were mainly engaged in agriculture. Approximately equal numbers of men and women appear to have been involved and only a quarter of them owned land (White op.cit).

The principalities (Vorstenlanden) were the only regencies on Java and Madura that were excluded in the Lesser Welfare research. Fortunately, on the situation in Yogyakarta and its surroundings, a number of case studies, as undertaken in more recent years by Indonesian researchers have become available. These studies indicate, for instance, that around 1920 a large share of the population of the village of Imogiri in Bantul depended on the making of leather wayang puppets for their income (Salamun 1992). Moreover, at the time, many among the rural population were involved in the batik business in both the villages of Imogiri and Sanden (the latter village is also located in Bantul). This observation also tallies with the earlier reports as referred to above.

**Table 1 Indonesian workers classified according to occupational groups*
for Jogjakarta region and Java, rural and urban, 1930 (%)**

Sector	Java	Jogjakarta
Agriculture	70	56
Forestry, fishing	2	1
Manufacturing	13	26
Transport, communication	2	1
Trade, banking, insurance	7	9
Service	3	4
Other	2	3
Total	100	100

* Excluding the category insufficiently definable which comprises 10 and 4% respectively of the total labour force in Java and the Yogyakarta region

Source : Volkstelling 1930, part VIII

In 1930, data were collected on a systematic basis during the population census (Volkstelling 1930). Available documentation provides valuable figures on the Javanese labour force at the time. Although differences in definitions of variables again hamper comparisons of these data with those of the earlier surveys, there are clear indications that the share of the population involved in non-agricultural activities has remained rather stable during the 1905-1930 interval, i.e. at about 30% (here, as indicated earlier, the 'adjusted' data for 1905 have been taken as baseline data). Apparently, the influence of the on-going population growth on the proportion of those active in the non-agricultural sphere was negligible. This can possibly be explained by the colonial government's large scale-efforts during the first years of the twentieth century in extending the irrigation infrastructure which allowed village populations to increase rice cropping intensity, which among other aspects, resulted in a growing need for labour.

From the breakdown in the 1930 census of the labour force as active in the trade and manufacturing sector, it appears that the Javanese women similar to the reports of 1905 provided the main labour input in both trading and in the largest industrial subsectors at the time, viz. textiles, food products, wood and bamboo products. In most other industries approximately half of the labour was provided by females. White presents data which allow for a crude estimate of the division of the labour force over the various types of production units. These data indicate that in the 1930s small scale industry comprised almost 95% of the workers in the main manufacturing branches (White 1991).

Obviously, in the 1930 census the "Vorstenlanden" were included. Its data on the area of the (present day) province of Yogyakarta reveal that the share of people involved in agricultural activities was relatively low: only 56% of the total labour force. From table 1 it appears this share was substantially higher in other parts of Java. Consequently, in 1930, 44% of the labour force of the Yogyakarta region was engaged in activities other than the agricultural sector. The majority of this share was involved

in the manufacturing sector, i.e. 26% of the total labour force. Furthermore, almost half of the female labour force (46%) was involved in the manufacturing sector. The most important subsectors were the branches of textiles (batik), wood and bamboo processing and food processing. Trade, banking and insurance was the next important non-agricultural sector; its share does not differ substantially from that the average reported for the whole of Java.

These findings are also supported by a study on the industrial development of the Netherlands' Indies by Sitsen (1943). He reports that by 1940 around half of the whole Javanese batik industry was concentrated in Yogyakarta, Solo and Pekalongan, situated on the northern coast of Central Java. Moreover, the importance of Yogyakarta for the batik industry appears from the establishment by the colonial government of a batik testing station there. In addition, a tanning and leather works laboratory was established in this centre.

In sum, it can be concluded that Java has a long and rich history of industrial activities. Taking into account the number and proportional share of people involved in non-agricultural activities, there is no hard evidence for accepting the presence of a "de-industrialization" process during the late nineteenth and the early twentieth century. The diverging opinions about this subject could be partly explained by the different interpretations of the term "de-industrialization". Whereas Boomgaard refers to the number and share of people involved in the non-agricultural sector, Antlov and Svensson (1991) and Saith (1992), focus on the number of industrial establishments and their production level and/or goal. According to Saith most "pre-industrial manufacturing industries" in the colonies which had an indigenous potential for capitalistic development at the moment of colonisation were victims of prior modern industrialisation at the centre. "They survived to the extent that the penetration of capital was imperfect. Thus, most proto and other rural handicrafts were reduced to the unviable status of survival activities of impoverished artisans and peasants" (p.18). Some authors acknowledge that a large number of people remained involved in non-agricultural pursuits, but rather refer to declining level and scale of production when writing about 'de-industrialization'.

Furthermore, and even more importantly, there is the fact that the involvement of the population in industrial activities has not been confined to urban dwellers: a substantial share of the rural population has been involved in industrial pursuits as well, either as a side line activity, or as a primary occupation.

RECENT DYNAMICS AND THE PRESENT-DAY PATTERN

The period between the early 1930s and the late 1960s was characterized by economic stagnation and decline and serious political turmoil. This resulted in the contraction of the rural economy to narrow agricultural subsistence levels and in strong declines in living standards for the majority of the Javanese population. The New Order government of Suharto adopted an explicitly rural-biased development strategy

that was focused on agricultural modernization. The main objective referred to obtaining food-selfsufficiency in rice. The introduction of a range of new technologies (such as high yielding varieties) resulted in an increase of both paddy yields and labour productivity (Huisman, 1994). Supported by rising levels of income and a growing demand for consumption or intermediate goods and services, this agricultural modernization has stimulated the diversification of the rural economy on Java. Other important factors have been the large investments in social and physical infrastructure and the large subsidies in rice production (Maurer 1991).

Nevertheless, in 1990 the share of the rural labour force primarily involved in the agricultural sector still stood at 58% (Hull & Jones 1994). However, although the majority of the rural Javanese labour force presently still reports that their primary occupation is in agriculture, there are very few Javanese rural households which do not obtain a significant part of their income from non-agricultural sources. Moreover, the National Social-Economic Survey of 1987 (SUSENAS), indicates that the share of non-farm sources in rural household incomes is more than 50% in all regions of Java. These figures are further confirmed by village level studies (as for example in the Agro-Economic Survey, in White and Wiradi 1989). When looking at the high percentage of households who combine farm and non-farm income sources, one should bear in mind the extremely small-average size of Java's farms: approximately 70% of the households on Java cultivating farmland (excluding DKI Jakarta), have access to less than 0,5 hectares (Sensus Pertanian 1993).

Studies indicate that in the agricultural sector more employment opportunities are present than before because of more labour input and a relative absence of mechanization (cf. IFAD 1988; Manning 1988; Huisman 1994). As a result of increased agricultural output levels, a relatively higher labour demand is observed in the non-agricultural sphere as well. Related to this observation, it seems that a somewhat higher rural income level is generally possible. This includes the poorer groups, although their participation is limited because of increasingly commercialized labour relations and the relative lagging behind of some sub-groups, such as, most notably, the female labourers. Overall, it seems that a higher agricultural production volume has resulted in a better food situation, including increased food security, better employment opportunities and better income earning opportunities. In addition, it should be noted that after the oil price collapse in the early and mid-1980s, a higher relative growth in the non-rice agricultural subsectors has occurred. This phenomenon has resulted in positive employment effects as well.

From available data it appears that trade, like in 1905 and 1930, presently comprises the largest number of persons primarily involved in the non-agricultural activities, i.e. 14% of all rural employment. Manufacturing comes second; it has increased only modestly over the last decades, i.e. from 8.5% in 1971 to 11.8% in 1990 (Hull & Jones 1994).

Table 2. Percentage distribution of rural employment by industry 1971-1990, rural Java (% of total)*

Major activity group	1970	1980	1990
Agriculture, hunting, forestry and fishing	71.0	66.7	57.7
Manufacturing	8.5	7.9	11.8
Construction	1.4	2.4	4.0
Trade, restaurants and hotels	10.7	11.5	13.8
Transport, storage and communication	1.3	1.7	3.0
Community, social and personal services	7.0	9.1	8.3
Other	0.1	0.5	1.4
Total	100.0	100.0	100.2
Number ('000)	21,775	25,540	30,322

* Persons with activities not adequately defined have been allocated to industry groups on a pro-rata basis.
Sources : Hull & Jones 1994, pp.146

The data on the employments status of those involved in non-agricultural activities show no great changes. For the sector as a whole, the share of self-employment as well as wage labour, has increased slightly. Consequently the share of family labour has increased moderately (see table 3). However, substantial differences between the various subsectors exist. Whereas between 1970 and 1990, the share of wage labour in the manufacturing sector has increased at the expense of self-employment, in the other two sub-sectors the reverse process has occurred.

Table 3. Share of self-employment and wage labour* in employment in rural Java for the most important non-agricultural sectors, 1971 and 1990 (%).

Major activity group	Self-employment		Wage labour	
	1970	1990	1971	1990
Manufacturing	31	24	54	61
Trade, restaurants and hotels	76	81	12	8
Community, social and personal service	14	26	81	71
Total	39	45	44	46

* Remaining share is mainly family labour, i.e. 12% in 1971 and 9% in 1990

Source : Sensus penduduk, seri E No10, 11, 12, 13, Sensus penduduk 1990, Seri S2.10, S2.11, S2.12, S2.13

The data on employment status in manufacturing for the rural population of Java are confirmed by the results of the Sensus Ekonomi. Even today, a substantial share of the Javanese manufacturing industry is located in rural areas. Mostly this concerns small scale industries are cottage industries. Almost 90% of the latter type of industry on Java is located in rural areas (Weijland 1990). However in accordance with the declining share of self-employment in the manufacturing sector, its share is

decreasing. More than half of the small-scale enterprise on Java are found in rural areas (Statistik Industri Kecil 1993). The share of the large and medium scale sector is increasing quite rapidly at the expense of the cottage industries. While the large and medium scale sector comprised only 13.5% of the manufacturing labour force in 1974/75 a decade later, in 1986, it had increased to one - third of those active in this sector (Weijland *op.cit.*; Thee Kian Wie, 1994). The share of cottage industries in the total number of industries fell from 80% in 1974/75 to 54% in 1986. In relation to this in this period, the absolute number of people involved in cottage industries has also declined. Presently, however, in spite of these development, still more than half of those employed in the manufacturing sector are involved in the cottage activities. On the other hand, the employment in the small scale industrial sector (comprising units with 5-19 employees) has increased, absolutely as well as relatively.

Past policies of the central government towards the development of industry have not been favourable to labour intensive small manufacturing industry, particularly those situated in rural Indonesia. Most funds available for industrial development were allocated to medium and large scale capital intensive import substitution industries. In addition, comprehensive sets of measures were taken to protect these activities from international competition. Complex systems of tariffs and duties, restrictions, and licenses, have long characterized Indonesian industrial policy. This 'incubator treatment' has often resulted in inefficient high cost public as well as private firms that were often dependent on imports for the necessary inputs in the production process. As a result, the sub-sector of small secondary activities has suffered from lack of resources, was faced with relatively high costs for purchased inputs, and could not sufficiently exploit the potential advantages of the low labour costs and flexibility in production which generally characterize these units.

In 1974, the government created a special agency, BIPK, which was charged with the provision of managerial and technical guidance to small industry, including rural-based activities. Starting in 1977, a number of centres for the development of small-scale industries were established under its responsibility. Although the performance has been impressive in a quantitative sense, the programme's design and implementation have been characterized by severe limitations. For example, non-clustered at all in the programme. Furthermore, although varying from one place to the other, in general the performance of both the common service facilities and the technical services centres seemed to be limited due to inadequacies in equipment, shortages of qualified staff, management problems, lack of maintenance and so on (Sethuraman 1985). Poor performance has also been reported in BIPK's programme "Bapak Angkat", which aimed at encouraging small industrial development by establishing linkages between units of varying scale through the proportion of sub-contracting. In practice, the parent firms rarely appeared to assist the small ones in the design and technical fields are envisaged in the projects plan of operation, and often displayed interest in the system only in instances when marketing constraints presented themselves and alternative methods were required (*op.cit.*).

In the mid 1970s, concessional rate credit programmes for the all-scale industrial sub-sector (KIK, KMKP as outline above) were also introduced. However, for small scale firms in the rural areas, this has not always resulted in substantial improvements in an economic sense. Especially, the cottage industries seemed to have hardly benefited from the credit programmes. Evaluations point out that in the early 1980s, barely 5% of the units in this group could make use or had access to the funds available in these contexts (op.cit).

The data on the rural labour force point to a steadily growing role of non-agricultural activities for the rural households. Within this diverse "category" of activities, the involvement in the manufacturing sector is growing slowly. However, it is not clear where these new jobs in the manufacturing sector are actually located, in the urban or in the rural areas. Apart from that, the pattern of rural industrialization shows large differences over the various regions on Java. The government policy towards rural industry has changed from total neglect to the introduction of supporting programmes, which, however, are biased in their implementation at the detriment of cottage-industries and the units located outside typical clusters of activities.

THE SOUTH EAST ASIAN SCENARIO AND THE RURAL NON-FARM ECONOMY OF YOGYAKARTA

Now we turn to a comparison of our research findings on the rural household economy and rural industry in the Special Province of Yogyakarta with the different stages of the scenario as outlined by Saith (1992), including his sketch of the prospects of rural industry in the various stages.

First however a brief summary of his "South-East Asian scenario" (pp.32-36) is appropriate here. Based on evidence from several East and South Asian countries, Saith has outlined a "multi stage stylisation of the behaviour of the different components of the rural non-farm economic activities of farming households" in South and East Asia. In this scenario he distinguishes the following elements in the rural non-farm activities; the wage component, i.e. wage labour, and self employment. Furthermore, he arrives at several "groups" of households on the basis of landownership, i.e. poor households with little or no land, rich landowners, middle farmers and artisanal (near) landless groups.

In stage one the economy is based mostly on self provisioning. Poor households with little or no land operate perforce in the non-farm wage labour market; the rich landowners do not and the middle farmers occasionally enter the market, for example at times of peak demand. The artisanal groups operate on the basis of self employment, supplementing these earnings with non-farm wage work in certain cases. Consequently, the wage component displays a clear inverse relationship with respect to land ownership, i.e. the proportional share of wage employment tends to be much higher for the households with relatively lower incomes and/or smaller landholdings.

In stage two the articulation with wider markets, increased monetisation and technological change and economic growth would imply that the rural rich could avenues for investing their surpluses into non-farm activities. Furthermore, an increasing total demand of labour per unit of land, prevent the middle farmers from participating fully in this shift. This leads to the emergence of the "U" pattern for self employment activities. The wage component would remain undisturbed.

In stage three, the inverse relationship displayed by the wage employment pattern, will intensify. Besides, the share of the wage component would rise. Both development are caused by a declining economic viability of the self employment activities of the poorer artisanal groups and households specialising in supplying traditional service. This would also cause the bottom arm of the self employment "U" to weaken, and eventually leading to the emergence of a positive pattern.

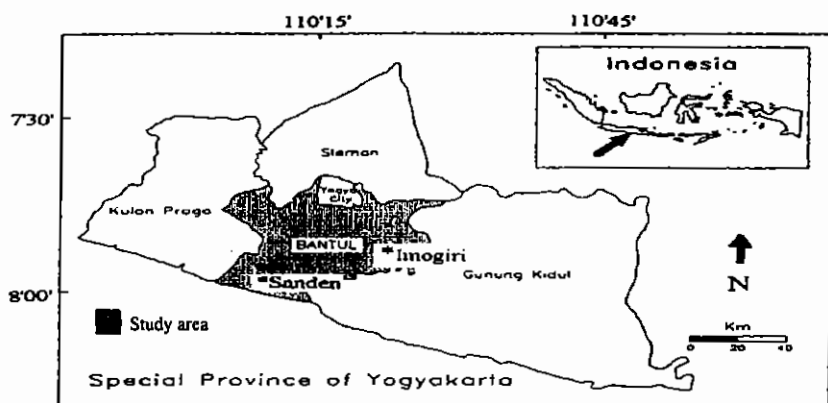
In stage four, the overall importance of the wage component would be further increased. As a consequence of competition from the modern town sector, the viability of the self employment of the rich would also begin to erode. The ultimate tendency of this erosion, for both the top and bottom ends of the landownership scale, still according to Saith, would be an even stronger inverse relationship of the wage component. The pattern for self employment activities would become somewhat random, and would exist at a lower relative level. At this stage the total non-farm involvement by farm size would display an inverse pattern.

In stage five all rural households would begin to be more involved in the urban sector and as a consequence, the importance of the non-farm sector as a whole would increase. However, the rural poor with their surplus labour, and the rural rich with the surplus investible funds, would be disproportionately involved. Labour migrations would occur both ends of the scale. The wage component would now be the overwhelmingly important one, and transfer incomes would overtake self employment incomes.

What is the relevance of this scenario for our study ? To answer such a question, first some background information is necessary.

Bantul Regency is one of the four regencies that is deemed representative for the conditions in the Special Province of Yogyakarta (see map 1). In this relatively small area, the various types of agricultural potential are present : in some parts, because of the availability of sophisticated irrigation systems, a highly intensive wet rice cultivation is possible, in other part semi subsistence production, with fluctuating but mostly small surpluses, predominates. On the whole, since the 1970s the output of the agricultural sector has increased strongly; also the Gross Regional Product (GRP) has increased substantially albeit at a lesser rate than in the other parts of Java. In the 1980s and early 1990s average growth rates per annum in the range of 5% to 6.4% are reported, against a national average of 7% for that period (Kantor Statistik D.I.Y. 1881; 1986; Kantor Statistik Bantul 1990; 1994; 1995, Hill 1994). In the mean time, the composition of the GRP has changed considerably as well. The share of the agricultural sector has declined from 54% in 1975 to 30% in 1993; the industrial sector

increased its share from 12 to 18% and trade and services from 12 and 5% respectively, to both 17%.



Source: SGO/GIS 1997

Map 1. The location of the study area

This distribution of the labour force over the various sectors deviates considerably from the pattern as generally observed in rural Java. Whereas in 1990, in the rural areas of Java as a whole, still close to 60% of the labour force was mainly agriculturally engaged, over the last decades the share of the agricultural sector has remained stable at a comparatively low 45 - 43% in this area (cf. Tables 2 & 4). Although the share of the labour force in manufacturing sector's work force has declined, it is still much higher than the average for rural Java. The lion's share (80%) is involved in cottage industry.

Table 4. Economically active population by industry in the rural areas of Bantul Regency, 1970 and 1990 (%)

Major activity group	1970	1990
Agriculture, hunting, forestry and fishing	45	43
Manufacturing	29	20
Construction	1	8
Trade, restaurants and hotels	14	15
Transport, storage and communication	6	9
Services	1	3
Others		
Total	100	100

Source : Population Sensus 1971 Seri E no.12 and Sensus Penduduk 1990, Seri S2/12.

Status of employment data from the provincial level also differ from the Javanese pattern. The growth of the share of wage labour mainly stems from the large increase in the share of wage labour in the industrial sector, at the expense of self employment. Still, the share of wage labour in manufacturing industry is much lower than on Java as a whole. The share of family labour has remained the same at the relatively high level of 16%.

Table 5. Share of self employment and wage labour* in employment in the rural areas of the Province of Yogyakarta for the most important non-agricultural sectors, 1991 and 1990 (%)

Major activity group	Self employment		Wage labour	
	1970	1990	1971	1990
Manufacturing	48	26	25	46
Trade, restaurants and hotels	83	73	5	8
Community, social and personal services	13	15	83	82
Total	49	35	33	49

* Remaining share is mainly family labour, i.e. 17% in 1971 and 16% in 1990.

Source : Sensus Penduduk 1971, Seri E No.12, Sensus Penduduk 1990, Seri S2.12.

The statistics on manufacturing and crafts for our study district reveal the following main characteristics.

Firstly, the considerable size of the sector: not less than 21,661 units are registered; **Secondly**, a highly fragmented nature: the average number of workers per unit in the whole sector stands at 2.4. According to the criteria applied by the Census of Industry of the Indonesian Bureau of Statistics, the majority of the units in crafts and manufacturing industry comprises household/cottage industry (<5 workers), with 20,835 units. There are only five large scale enterprises (< 100). Unfortunately the results of the Sensus Ekonomi 1996 are not available yet so that we cannot examine whether the declining share of self employed people in the manufacturing sector has actually led to a declining share of cottage industries in the total number of manufacturing enterprises.

Thirdly, the nature of activities performed is varied: dominant within the group of household/cottage industry are the manufacturing of wood products and furniture, food processing, and the manufacturing of textile and leather products. In the small and medium scale segment, one - third of the firms process food. The rest is rather evenly distributed over the other fields of production; and fourthly, the spatial distribution of the various types of activity shows a strong tendency of clustering in certain locations, sometimes in obvious response to availability of resources (for instance, a certain type of clay suitable for the production of roof tiles), or as an outcome of a historically grown process of specialization in village communities. In addition, it appears that

much of the small and medium scale industry is concentrated in the peri urban subdistricts, bordering the territory of Yogyakarta (sensus Ekonomi 1986).

Data on economic activities of the labour force by "landownership group" can be derived from our detailed research results from four village surveys as carried out in recent years in the various agricultural potential zones at varying distances from the city of Yogyakarta.

The level of involvement in non-agricultural activities is very high. More than 85% of the households obtains at least part of their income from non-agricultural sources; close to half of the economically active members of the households under survey are primarily involved in the non-agricultural sector (see table 6). Our data also reveal in inverse relationship between possession of farmland and the importance of non-agricultural sources of income. Whereas for more than 80% of the economically active members of the landless households non-agricultural sources of income are the most important, for those belonging to households possessing up to 0.75% hectares this is 52%, and for those belonging to households which possess more land it amounts to 44%. Both types of non-agricultural activities are much more important for the members of the households at the lower end of the landownership scale than for those at the top end.

At the household level (cf. Annex 1) the inverse relationship between landownership and non-agricultural labour is less pronounced. The actual involvement of the various groups of households in non-agricultural labour appears to hardly differ (cf. Annex 2). The involvement in self employment on the other hand, show a clear inverse relationship.

Table 6. Most important activity with regard to income level of the economically active members of the households under survey by landownership (%)

Type of income/Land-ownership (hectares)	0 n = 353	>0<0.75 n = 674	>0.74<1.50 n = 144	>1.49 n = 71	Total n = 1242
Agricultural	18	48	52	62	41
Non-agricultural own enterprise	45	29	24	21	32
Non-agricultural labour	37	23	24	17	27
Total	100	100	100	100	100

Source : Household Survey 1995, 1996.

This picture does not fit into any of the stage as outlined by Saith. The role of self-employment shows the most evident deviations. Whereas Saith (1992) expects either an "U" shaped pattern in the first phase or a positive pattern in the later phase, our data show a clear inverse relationship between landownership and the importance of self-employment. Data on the household level with regard to the largest income sources and actual involvement in non-agricultural labour weakens sq. ignores the inverse relationship found at the personal level, such in contrast to the household level data on non-agricultural self-employment.

To explain our divergent findings, the assumptions made by Saith need some closer scrutiny. It appears that, first, Saith distinguishes a separate group of artisanal households. However, as has been pointed out in the first two sections of this present study, a large share of the rural households, was already involved in-agricultural activities in the past. Apart from that, involvement in these activities has not been confined to landless or nearly landless households, also larger landowners were engaged in non-agricultural pursuits.

Second, Saith assumes that large landowners are the richest households. In our study area however, the differences between the landownership groups with regard to monthly household incomes obtained, are not substantial (cf. Table 7). This divergent pattern can be explained by the extremely fragmented distribution of farmland: the very high population density in this area (even for Javanese standards) has prevented the emergence of a group of truly large landowners. Possession of more than 0.75 hectares of sawah can rarely be found. Besides, in those areas where the plots of farmland owned by households are somewhat larger (more than 1 hectare of dry-land 'tegal' is quite common), distribution of farmland is more even. In addition, the agricultural potential in these parts is quite low so that a larger plot of farmland does not provide the basis for higher incomes.

Table 7. Distribution of households over the different income groups by landownership (%)

Monthly income/Land-ownership (hectares)	0 n = 195	>0<0.75 n = 282	>0.74<1.50 n = 47	>1.49 n = 32	Total n = 556
1*	24	27	23	22	25
2	30	28	24	25	28
3	30	33	34	28	32
4	16	12	19	25	15
Total	100	100	100	100	100

* 1 < 80,000 Rupiahs, 2 80,000 - < 150,000, 3 150,000 - < 400,000, 4 400,000 -

Sources : Household Survey 1995, 1996

Data presented in table 8 further confirm this pattern. It appears that the share of economically active persons obtained their largest income in the agricultural sector, is much more substantial in the lower household income groups than in the higher ones. Furthermore, in contrast to what Saith (1992) has observed, the share of economically active persons obtaining their largest source of income in non-agricultural labour, is lowest in the bottom income group and much higher in the higher income groups, especially in the top income group.

Table 8. Most important activity with regard to income level of the economically active members of the households under survey by monthly household income (%)

Type of income/Household income (Rupiahs)	<80,000 n = 278	80,000 - <150,000 n = 336	150,000-<400,000 n = 419	400,000- n = 206	Total n = 1239
Agricultural	53	46	39	16	40
Non-agricultural own enterprise	32	26	37	36	33
Non-agricultural labour	15	28	24	48	27
Total	100	100	100	100	100

Source : Household Survey 1995, 1996.

The absence of a positive relationship between landownership and household income as indicated above clearly shows. Agricultural activities provide a much larger share of the economically active members of the households in the higher landowning group with their largest income, compared to those in the lower land owning groups. Moreover, non-agricultural labour and non-agricultural self employment provides the largest income for 50 and 30% of the households, respectively possessing more than 0.74 hectares of farmland and with monthly household incomes of more than Rp150.000.

A further explanation for the absence of a relationship between farmland and the level of income can be found in the relative lack of interest in further commercialisation of farming in parts with poor soil fertility and lack of water, such as generally found in the upland areas. In the lowland areas, households mainly use their farmland as a way of securing their food (rice) needs. Hardly any of the other hand, households considers their farmland as an investment opportunity to expand their income. On the other hand, households are not very willing to sell their farmland, since they consider it a way of securing their pension or as a sources of secure income in kind in times of turmoil.

The conclusion that the share of people for which non-agricultural labour provides the largest income is the highest in the top income groups, may be indication that non-agricultural labour is a well rewarding activity. Saith however, assumes that non-agricultural labour is mainly a "last resort option" for the members of the landless and near-landless households.

In line with the assumed positive relationship between household income and landownership, Saith expects that a positive relationship exists between the level of earnings in non-agricultural activities and the amount of farmland possessed. Our data do not allow for any firm conclusions, but they do point at a higher level of earning in non-agricultural activities for members of the highest landownership group, i.e. those possessing more than 1.5 hectares of farmland. However, due care is in place here because the relevant group of people is much smaller than the other groups, i.e. the members of the lesser landowning households involved in non-agricultural activities.

On top of this, there is no substantial difference in level of earnings between the other landownership groups. Consequently, there is no evidently positive relationship between the level of earning in non-agricultural activities and landownership, as Saith has assumed.

Finally, Saith (op.cit.) assumes that the decreasing opportunities for self-employment caused by competition from (modern) town based activities, are compensated for by growing employment opportunities in non-agricultural labour. In Yogyakarta however, the available employment opportunities in the "formal sector" do not match the demand for employment by far. This adds to the explanation of the relatively high share of larger landowning households which are engaged in non-agricultural self employment. The only remaining opportunity to expand the household income is to start your own business.

In addition, we have just shown that there is no relationship between level of household income and landownership. Therefore, large landowning households have to find other sources of income besides their farming activities to support their families as well. On the other hand, a substantial share of the larger landowning households in our research area are situated in a less accessible upland area. Non-agricultural labour opportunities are rare in this area and therefore people are forced to create their own income and employment opportunities.

In addition, incomes obtained, even those from the formal sector, are usually not sufficient to support a household. Consequently, job multiplicity is still common in our area. For example, incomes obtained by government employees are usually very low. The working hours however, offer plenty opportunity to supplement incomes with other activities.

THE PROSPECTS OF RURAL INDUSTRY

Our primary data from a number of industrial enterprise surveys, allow for the following typology of the various activities in Bantul's industrial sector as regards the key aspects of remunerativeness and viability:

1. Submarginal activities, which only survive due to lack of alternatives for those active in these fields (typical supply/push refuge-type of activities/activities of the last resort) or activities which are pure sideline activities performed during so called 'lost moments', often exemplified by the production palm sugar at household level (gula jawa), basket and matweaving and making of certain food products such as traditional crackers (emping).
2. Stagnant or decreasing activities, in which those active increasingly face difficulties in generating an income at a level that compares positively with the

going minimum daily wages for unskilled labour³, such as the production of batik, small scale garments production and making of traditional types of medicine.

3. Growing activities, in which those involved are generally able to generate comparatively attractive, and growing incomes due to rising turnovers, such as furniture making, luxury food production and bamboo handicraft production.
4. Booming activities, with fastly growing turnovers and dito incomes for those involved, exemplified by art type handicraft production of earthenware figurines and sculptures, the making of wayang puppets both from leather and wood, and the production of sophisticated leatherware, often in combination with woven bamboo.

The majority of enterprise found in in our study area belongs to the first two types of activities. Nonetheless, the growing and booming activities are also well represented. This points to phase three of Saith's scenario in which the economic viability of the self-employment activities of the poorer artisanal groups and households specialized in supplying traditional services, are expected to face declining economic viability. Since our enterprise sample surveys did not comprise 'booming industries', we only can present data on the first three types of industry. (The booming types of industries were targeted for individual visits during case studies).

Saith distinguished only two types of non-agricultural activities, i.e. "inferior activities" and "other activities". He argues that the inferior activities face increased competition from superior substitutes that are injected into the rural economy through the expansion of the RNFE.

Our first two types of activities seem to correspond with this group. The second group which he distinguishes is not very well specified apart from that "... It does not have such inferior characteristics and that it may be a rural" art" product with a high income elasticity of demand; or it could be an activity which is capable of internal technological transformation and development." (1992, p.42).

Subsequently, he expects the better off to shift out of the inferior activities. Our findings seem to point in that direction. A relatively larger share of the landless or almost landless households in our study area is involved in the first two types of activities, in comparison to the more farmland possessing households (cf. Table 9). These findings are confirmed when comparing the distribution of the households involved in the different types of industries over the landownership groups with the results of the households survey (see annex 3). These data show that the households involved in type I and II activities (marginal and stagnating or decreasing activities) are overrepresented in the lowest two landownership groups. The share of landless households possessing more than 0.75 hectares of farmland on the other hand, is overrepresented in the group of growing activities. Consequently, no evidence is found

³ In 1995, the minimum wage per day for the Province of Yogyakarta as set formally by the government amounted to Rp 2.850. This amount equals to approximately US\$ 1.25 (EIU 1996).

for a clear positive relationship between landownership and the involvement in certain of industries.

Table 9. Distribution of the enterprises over the different types of industry by landownership (%)

Type of Industry/ Landownership (hectares)	0 n = 50	>0<0.75 n = 122	>0.74<1.50 n = 22	>1.49 n = 10	Total n = 204
(sub) Marginal activities	32	66	32	-	51
Stagnant or decreasing activities	30	13	5	10	16
Growing activities	38	21	63	90	33
Total	100	100	100	100	100

Source : Enterprise Surveys 1995

The figures on the median plot of farmland possessed by the households involved in the different types of activities, confirm that this relationship is not a linear one. The median acreage of farmland owned by the households involved in marginal activities is 0.21 hectares while it is 0.09 and 0.50 hectares for the households involved in stagnant or decreasing activities and for those involved in growing activities respectively. A possible explanation for this partly negative relationship between type of activities and landownership, can be found in the side-line and supplementary character of most of these marginal activities. Although profits are very low, households continue their activity as a side-line activity because of the need to supplement their income. People hang in to these activity because of a lack of alternative employment opportunities. In combination with the small plots of farmland cultivated by a large share of these households, they manage to survive. The share of landless households is lowest in the marginal activities group at 16% and highest for the stagnating or decreasing activities group, i.e. almost 50%.

Our data with regard to the booming activities point at a relatively even involvement of households of all landownership groups. Moreover, the households involved in this group of industries do not seem to possess more farmland than the households involved in growing activities.

These findings show that next to landownership other factors cause different households to engage in different types of activities. Apart from that, it is important to realize that landless households who are involved in industrial activities, often buy farmland when they have accumulated the finances required. This complicates the analyses of the relationship between landownership and the type of activity in which a

household is involved. It is very well possible (and it occurs quite frequently) that a landless household becomes involved in a "growing type of activity" which eventually provides it with the funds to buy some farmland. In this case, the non-agricultural enterprise furnishes the household with the capital to buy a plot of farmland, providing the family with the capital to start a non-agricultural enterprise. In addition, although it is still easier for households with substantial plots of farmland (collateral, surpluses) to obtain the capital needed to start a business, there are other ways for obtaining the initial investment capital as well. After working for a boss for a few years, men usually start their own business. To reduce the initial investment capital, they often begin working on a putting out basis for their former boss. After a few years they usually have saved enough and have found their own outlet channels to terminate the putting out contract.

One of the other factors explaining the diverging activities in which different households are involved is tradition and history. The growing tourism sector has provided an enormous stimulus to the demand for certain traditional art products like the wayang puppets. These have been made in the area since the beginning of this century. As a consequence of the growing demand for wayang puppets, nowadays almost 90% of the households in a certain village is involved in this line of business. Another example is the production of a luxury food cracker called "krecek". Since the 1940s a few households in a settlement made *krecek* on a very small scale. From the late 1970s their business started to grow rapidly and within 10 years time the village counted 30 enterprises making *krecek*, employing around 250 people. The fast growth of tourism to Yogyakarta also caused the rapid expansion of activities for which there was no special tradition. For example, the leather business has grown at an enormous pace during the late 1980s and the early 1990s. Furthermore, the tourism sector has caused the pottery industry, which according to Saith (op.cit.) is a typical 'inferior type of activity', to flourish.

With regard to the prospects of the different types of industries, it is to be expected that eventually the marginal and decreasing or stagnating activities will vanish. This process will be a lengthy one since many of these activities provide a supplementary income. As long as employment in the formal sector remains hard to find and incomes in this sector remain very low, people will stick to these activities.

The growing and booming industries on the other hand will, in contrast to what Saith expects, probably not move into town of face severe competition of products made in towns. These products mainly concern handicrafts for which manual labour can not be replaced by machines and/or for which an explicit demand for handmade products exists (cf. Huisman & Kragten 1995). Furthermore, the demand for some of these products is too small (i.e. is restricted to certain areas) so that mass production is not viable. Labour is still the cheapest by far in the rural areas. Since most parts are very accessible, there is no reason for these enterprises to move into towns.

CONCLUSION

The last few decades, the traditionally important role of non-agricultural pursuits for employment and income of the rural population on Java has increased further. At present, close half of their main employment opportunities as well as incomes generated stem from outside the agricultural sector. The proportional share of wage labour is steadily growing. Long since, rural industry is dominated by small enterprises; the relative proportion of employment offered by this subgroup, however, is decreasing slightly. Also recent and detailed information on the dynamics in Bantul, a research is that can be considered representative for the conditions as present in the Special Province of Yogyakarta, point in this direction. From the analysis carried out it appears that Saith's multistage stylisation of the behaviour of the different components of the rural non-farm economic activities of farming household (1992) hardly conforms the overall dynamics in our study area. Neither of the stage as delimited by Saith applies. A first glance, for rural industry stage three seems to apply. On closer inspection, however, it appears that a clear cut relationship between landownership groups and type of activities of households is absent. In addition, the perspectives for this prospects of rural industry. We see both growing and booming activities represented in our area of study and do not expect these to move to cities or face severe, crippling competition from urban based production.

To explain the divergent situation various factors can be brought forward. First, it is interesting that Saith uses the groups of poor landless or nearly landless households and rich large land owning household in the first phase, while in the other phases he only refers to poor, middle and rich households. It is not clear whether this means that with regard to the following phases he no longer assumes a relationship between landownership and income level. Do the traditional rural relations change because of non-agricultural activities? He argues that "... the deduction, based on the static reading, that non-farm incomes tend to be an equalising force may not necessarily be applicable in all situations and at all times." (Saith 1992, p.35) Especially in the earlier phases he expects that the income gap between landowning and landless households will grow. Our evidence however, points in the direction of changing rural relations.

Saith elaborates on the agricultural differentiation process and the rural non-farm economy. It seems that if he had taken into account the different potential roles of the agricultural sector in his scenario, it would have made it much more relevant. Our data indicate that the development of the agricultural sector cannot be isolated from the development of the non-agricultural sector. Agricultural differentiation, as Saith terms it, and non-agricultural diversification, are two mutually influencing processes which should not be treated in isolation.

He distinguishes several possible ways in which the different groups of households will participate in agricultural differentiation. It seems that in our area, the rich entrepreneurs want to retain a portfolio with agricultural landholdings not as Saith

assumes, as a capital gains drawing element, but rather as a means of "risk aversion". The near landless and small landowners on the other hand, can certain their hold over their tiny plots because of, like Saith expects, the new opportunities in the rural non-farm economy. Without these, this group of households probably would be forced to sell their land.

These two developments of the "farm sector" according to Saith lead respectively, a stagnation and a slowing down of the agricultural diversification process. The developments as studied by us seem to confirm this expectation. There has not been any agricultural diversification in the lowland area for a long time until recently. Diversification in the upland has taken place to some degree, but not really substantially. Due to the agricultural policy of the Indonesian government which mainly focussed on increasing rice production levels little or no attention was paid to the promotion of other crops.

Only recently such programmes have been developed. Consequently, for a long time there have not been any real investment opportunities in agriculture. This, in combination with the extremely fragmented division of farmland, has caused (large) landowning as well as landless households to engage in non-agricultural activities to augment their incomes. A number of other spatial context specific factors, such as persistently high population densities, the historically grown patterns, the rapid growing of tourism, highly improved accessibility and the lagging growth of formal sector employment opportunities, are responsible for present day dynamics. All in all, a complete specialization of the rural areas in agricultural production as ultimately foreseen by Saith does not seem a likely future for Java.

ANNEX 1. Largest sources of income of the households under survey by landownership (%)

Type of income / Landownership (hectares)	0 n = 171	>0<0.75 n = 274	>0.74<1.50 n = 47	>1.49 n = 31	Total n = 523
Agricultural	20	44	47	58	37
Non-agricultural own enterprise	41	28	21	16	31
Non-agricultural labour	39	28	32	26	32
Total	100	100	100	100	100

Source : Household Survey 1995, 1996.

ANNEX 2. Involvement of households in different types of activities by landownership (%)

Type of income / Landownership (hectares)	0 n = 182	>0<0.75 n = 285	>0.74<1.50 n = 49	>1.49 n = 32	Total n = 548
Agricultural					
Yes	93	84	86	72	86
No	7	16	14	28	14
Non-agricultural own enterprise					
Yes	68	63	65	47	64
No	32	37	35	53	36
Non-agricultural labour					
Yes	55	43	55	56	49
No	45	57	45	44	51

Source : Household Survey 1995, 1996.

ANNEX 3. Distribution of Households over the different landownership groups by type of industry compared to the distribution of households over the different landownership groups resulting from the household survey (%)

Landownership (hectares)/ Types of industry	(sub) Marginal activities n = 103	Stagnating or decreasing activities n = 33	Growing activities n = 68	Total Household Survey n = 556
0	15	46	28	35
>0<0.75	78	48	38	51
>0.75<1.50	7	3	21	8
>1.49	-	3	13	6
Total	100	100	100	100

Source : Household Survey 1995, 1996, Enterprise Survey 1996

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